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EXAMINER

NATNAEL, PAULO M

ART UNIT	PAPER NUMBER
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2614

DATE MAILED: 08/14/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/725,905

Applicant(s)

HONG ET AL.

Examiner

Paulos M. Natnael

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 8-20 is/are rejected.
- 7) ☒ Claim(s) 4-6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
2. Claims **12-19** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim **12-17**, and **19** the claimed phrases "said first portion" and "said second portion" lack antecedent basis.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims **1-3**, **8-11**, and **20** are rejected under 35 U.S.C. 102(e) as being anticipated by Jung, U.S. Pat. 6,456,341.

Considering claim 1,

- a) a CRT for creating an image, is met by CRT 50, fig.5.
- b) a lens for magnifying said image created from said CRT and projecting said image onto a screen, is met by the Lens 60, Fig.5;
- c) a coupler disposed between said CRT and said lens, coupling said lens to said CRT, defining a cooling liquid receptacle filled with a cooling liquid, is met by the coupler 70, fig.5;
- d) a cooling liquid pouring inlet formed one side of said coupler, providing a passage way for pouring the cooling liquid into said cooling liquid receptacle, is met by coolant injection hole 72, fig.5;
- e) an oilpack connected to said cooling liquid pouring inlet, communicating said cooling liquid receptacle so that a portion of the cooling liquid is contained in said oil pack when the cooling liquid filled in said cooling liquid receptacle expands and said portion of the cooling liquid overflows from said cooling liquid receptacle, is met by the disclosure that "the oil cap 80 can be deformed into a concave shape when coolant C expands according to changes in pressure of a coolant receiving portion 71." (col. 3, lines 38-41)

Considering Claim 2, the CRT assembly of claim 1, wherein said oilpack is made of a material having flexibility so that the volume of a sealed inner space of said oilpack varies by the flow of the cooling liquid into or out of said oilpack depending on the expansion and contraction of the cooling liquid, is met by the disclosure that "the oil cap

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80 can be deformed into a concave shape when coolant C expands according to changes in pressure of a coolant receiving portion 71." (col. 3, lines 38-41)

Considering Claim 3, the CRT assembly of claim 1, said oilpack further comprising:

a) a pack holder coupled to said cooling liquid pouring inlet, having a through hole communicating both a sealed space of said oilpack and said cooling liquid receptacle of said coupler, is met by oil cap holder 85, fig.6. (col. 3, lines 53-57)

b) an oilpack coupling means formed on said pack holder, coupling said pack holder to said cooling liquid pouring inlet of said coupler, is met by sealing portion 81, fig. 6;

Considering Claim 8, a cathode ray tube (CRT) assembly of a projection television, comprising;

a) a CRT creating an image, is met by CRT 50, fig.5.

b) a lens magnifying the image produced from said CRT and projecting the image onto a screen, is met by the Lens 60, Fig.5;

c) a coupler disposed between said CRT and said lens, coupling said lens to said CRT, defining a receptacle filled with a cooling liquid, is met by the coupler 70, fig.5;

d) an inlet formed on one side of said coupler, communicating said receptacle, is met by coolant injection hole 72, fig.5;

e) a pack unit coupled to said inlet, having a pack, a pack holder having a first end coupled to an open portion of said pack and a second end coupled to said inlet, a through hole formed inside of said pack holder and communicated with both said pack and said receptacle, is met by the disclosure that “the oil cap 80 can be deformed into a concave shape when coolant C expands according to changes in pressure of a coolant receiving portion 71.” (col. 3, lines 38-41)

Considering Claim 9, the CRT assembly of claim 8, said pack unit is detachably attached to said inlet of said coupler, is met by the disclosure that it is possible to remove “an oil cap holder from said coolant system and removing an oil cap from said coolant”. (col. 6, lines 3-4)

Considering Claim 10, the CRT assembly of claim 8, wherein said pack is made of a flexible material and includes said open portion and a closed portion accommodating a portion of said cooling liquid flowed from said receptacle through said through hole.

Regarding claim 10, see rejection of claim 2;

Considering Claim 11, the CRT assembly of claim 10, wherein the volume of said pack varies by the portion of said cooling liquid flowed from said receptacle, is **inherent** because the volume change in the oil pack would be dependent upon whether the coolant expands or contracts.

Considering Claim **20**, a cathode ray tube (CRT) assembly, comprising:

- a) a CRT, is met by CRT 50, fig.5;
- b) a lens projecting an image produced from said CRT onto a screen, is met by 60, fig.5;
- c) a coupler disposed between said CRT and said lens to couple said lens to said CRT, having a receptacle filled with a cooling liquid, is met by coupler 70, fig.5;
- d) a pack having a sealed portion and an open end, is met by oil cap 80, fig.5.
- e) a pack holder having one end detachably attached to an inlet of said coupler, having the other end coupled to said open end of said pack, is met by cap holder 85, fig.5;
- f) a through hole formed on said one end and said other end of said pack holder, communicating both said receptacle and an inside of said sealed portion of said pack, is met by hole 72, fig.5;

5. Claims **1-3,7-8, and 10-12** are rejected under 35 U.S.C. 102(e) as being anticipated by Takezawa et al., U.S. Pat. 6,130,497.

Considering claim **1**, Takezawa discloses all claimed subject matter, note;

- a) a CRT for creating an image, is met by CRT 42, fig.7.
- b) a lens for magnifying said image created from said CRT and projecting said image onto a screen, is met by the Final Lens 45, Fig.7;

c) a coupler disposed between said CRT and said lens, coupling said lens to said CRT, defining a cooling liquid receptacle filled with a cooling liquid, is met by the coupler 43, fig.7;

d) a cooling liquid pouring inlet formed one side of said coupler, providing a passage way for pouring the cooling liquid into said cooling liquid receptacle, is met by the liquid fill hole 53, fig.7;

e) an oilpack connected to said cooling liquid pouring inlet, communicating said cooling liquid receptacle so that a portion of the cooling liquid is contained in said oil pack when the cooling liquid filled in said cooling liquid receptacle expands and said portion of the cooling liquid overflows from said cooling liquid receptacle, is met by the disclosure that "a pressure regulating valve or diaphragm 51 for regulating the pressure of the cooling liquid 46 is mounted". (col. 4, lines 12-14)

Considering Claim 2, the CRT assembly of claim 1, wherein said oilpack is made of a material having flexibility so that the volume of a sealed inner space of said oilpack varies by the flow of the cooling liquid into or out of said oilpack depending on the expansion and contraction of the cooling liquid, is met by the disclosure that the diaphragm may be "of a membrane which is made of, for example, ethylene-propylene rubber, a mixture of ethylene-propylene rubber and silicone, or butyl-rubber. The diaphragm 15 takes an equilibrium state, a state swelling to the open air and a state contracted towards the cooling liquid depending on the volume change of the cooling liquid 6 due to the temperature change. (col. 1, 46-53)



Considering Claim 3, the CRT assembly of claim 1, said oilpack further comprising:

a) a pack holder coupled to said cooling liquid pouring inlet, having a through hole communicating both a sealed space of said oilpack and said cooling liquid receptacle of said coupler, is met by the lens fixing plate 50, fig.7, which is utilized as a diaphragm holder" (col. 4, 15-16)

b) an oilpack coupling means formed on said pack holder, coupling said pack holder to said cooling liquid pouring inlet of said coupler, is met by sealing screw 54, fig.7;

Considering Claim 7, the CRT assembly of claim 3, said pack holder comprising a supporting portion being L-shaped so that said cooling liquid pouring inlet and one end portion of said pack holder form an angle while the other end portion of said pack holder is coupled and parallel to said cooling liquid pouring inlet, is met by diaphragm 51, fig.7;

Considering Claim 8, a cathode ray tube (CRT) assembly of a projection television, comprising;

a) a CRT creating an image, is met by CRT body 42, fig.7.

b) a lens magnifying the image produced from said CRT and projecting the image onto a screen, is met by the Final Lens 45, Fig.7;

- c) a coupler disposed between said CRT and said lens, coupling said lens to said CRT, defining a receptacle filled with a cooling liquid, is met by the coupler 43, fig.7;
- d) an inlet formed on one side of said coupler, communicating said receptacle, is met by the liquid fill hole 53, fig.7;
- e) a pack unit coupled to said inlet, having a pack, a pack holder having a first end coupled to an open portion of said pack and a second end coupled to said inlet, a through hole formed inside of said pack holder and communicated with both said pack and said receptacle, is met by "diaphragm 51 for regulating the pressure of the cooling liquid 46" (col. 4, lines 13-14)

Considering Claim 10, the CRT assembly of claim 8, wherein said pack is made of a flexible material and includes said open portion and a closed portion accommodating a portion of said cooling liquid flowed from said receptacle through said through hole;

Regarding claim 10, see rejection of claim 2;

Considering Claim 11, the CRT assembly of claim 10, wherein the volume of said pack varies by the portion of said cooling liquid flowed from said receptacle, is met by **inherent**, because the volume change in the oil pack would be dependent upon whether the coolant expands or contracts.

Considering Claim 12, the CRT assembly of claim 8, wherein said first portion and said second portion of said pack holder are perpendicular to each other.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims **9, 13, 18, and 19** are rejected under 35 U.S.C. 103(a) as being unpatentable over Takezawa et al. U.S. Pat. No. 6,130,497.

Considering Claim **9**, the CRT assembly of claim 8, said pack unit is detachably attached to said inlet of said coupler.

Regarding claim 9, Takezawa does not specifically disclose whether the pack unit is detachable. However, the Examiner takes Official Notice in that it is well known in the art to removably or detachably attach unit on the main body of the pack system and, therefore, it would have been obvious to the skilled in the art at the time the invention was made to modify the system of Takezawa to removably attach the pack unit in order to mount and/or remove easily and conveniently.

Considering Claim **13**, the CRT assembly of claim 8, said first portion of said pack holder including a structure for rotating aid pack holder when said pack holder is connected to said inlet.

Considering Claim **18**, the CRT assembly of claim 14, further comprising a ring inserted between said supporting portion and said a side of said inlet to seal said inlet.

Regarding claim 18, Takezawa does not specifically disclose a ring. However, the Examiner takes Official Notice in that it is well known in the art that a ring around a screw, cork, or other such similar device would be inserted to prevent the liquid therein from leaking and seal any such inlet or hole. Therefore, it would have been obvious to the skilled in the art at the time the invention was made to modify the system of Takezawa and provide a ring around the inlet and seal the inlet or hole, in order to prevent leaks.

Considering Claim **19**, the CRT assembly of claim 14, said through hole comprising a first hole portion formed inside of said first portion o said pack holder and a second hole portion formed inside of said second portion of said pack holder, said first hole portion being perpendicular to said second hole portion.

Regarding claim **19**, see rejection of claim 12;

***Allowable Subject Matter***

8. Claims **4-6** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter: the prior art fails to disclose a CRT assembly comprising an oilpack coupling means including a protrusion formed in a cooling liquid pouring inlet of the coupler, a guiding portion formed on a pack holder so that said protrusion is coupled to said guiding portion; a holding portion formed on said pack holder and disposed within said cooling liquid receptacle to tightly couple the pack holder to the coupler when the protrusion is captured within said guiding portion, as in claims **4**;

### ***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

**Ushizaka**, U.S. pat. 6,384,874 discloses a display apparatus including a cooling liquid container for containing cooling liquid for cooling the cathode ray tubes.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paulos M. Natnael whose telephone number is (703) 305-0019. The examiner can normally be reached on 6:30am -3pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller can be reached on (703) 305-4795. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4750.

A handwritten signature in black ink, appearing to read 'Michael H. Lee', with a stylized, flowing script.

MICHAEL H. LEE  
PRIMARY EXAMINER

Paulos Natnael  
August 9, 2003

*Pmn*